

Date: Tue, 22 Mar 94 04:30:32 PST  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V94 #69  
To: Ham-Homebrew

Ham-Homebrew Digest                      Tue, 22 Mar 94                      Volume 94 : Issue    69

Today's Topics:

    Best cars for mobile HF/VHF?? (2 msgs)  
        COMPUTER AS A REPEATER CONTROLLER  
    Converting CB to 10 meters (2 msgs)  
        DownEast Kits ??  
        Meter Shunts, etc (2 msgs)  
        Parasitic oscillations, help!  
    Series Diodes (was Re: Paralleling Power Di  
        Simple Tx/Rx? (2 msgs)  
Update on 'Magazine - Mechanix Illustrated, 1930s, Crystal Set'

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 21 Mar 1994 20:17:13 GMT  
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!usenet.ins.cwru.edu!  
howland.reston.ans.net!cs.utexas.edu!convex!news.utdallas.edu!feenix.metronet.com!  
serafin@network.ucsd.edu  
Subject: Best cars for mobile HF/VHF??  
To: ham-homebrew@ucsd.edu

Hey what about a HUMMER!!

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Date: Mon, 21 Mar 1994 14:59:01 GMT  
From: ihnp4.ucsd.edu!news.acns.nwu.edu!math.ohio-state.edu!sdd.hp.com!  
hpscit.sc.hp.com!hplextra!hplb!hpwin052!hpqmoea!dstock@network.ucsd.edu

Subject: Best cars for mobile HF/VHF??

To: ham-homebrew@ucsd.edu

Mike Willis (M.Willis@ee.surrey.ac.uk) wrote:

: In article <CMIACE.D9C@hpqmoea.sqf.hp.com>, dstock@hpqmoca.sqf.hp.com (David Stockton) writes:

: |>

: |> I'm happy with my choice, a Diesel powered Range-Rover derivative  
: |> called a "Discovery"

: |>

: |> Give serious thought to Diesels, no ignition, no computers

: |>

: |> David GM4ZNX

: Yes, but at a mere 18,000 pounds not many can afford such a car. Practically, I  
: found the Cavallier reasonable RF quiet. Fiat Uno, too noisy. Diesels are  
: definately better, they have a bigger battery too.

: Mike

18,000 ho ho, you've been reading the brochures ! Just decide on a few creature comforts, a radio other than the one that comes standard (unbelievably nasty) and you are talking a lot more dosh still. I managed to resist the temptation of the central heating boiler and freezer, but occasionally wonder about adding a winch. The headlamps are a bit lacking (remember Spike Milligan's landladies' light-bulb jokes?) so a pair of decent lamps is essential, and the lamp bracket needed is #200+ bull-bar shaped... these things are not much diffeerent to range-rover prices when you get to decent levels of equipment...

With a heavy trailer behind and a pair of large horses, it's true class shows.

The local RIS man has been given a Discovery with a pneumatic mast through the roof. He's as happy as the proverbial dog with 2 tails. they've bolted a 240v generator where the airconditioner pump would go.

Note for US readers, see lower photo on Feb QST cover to see one of these vehicles out for a little fun....

Cheers

David

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Date: Mon, 21 Mar 1994 01:47:19 GMT

From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!math.ohio-state.edu!news.acns.nwu.edu!ftpbox!mothost!mdisea!mddvan!vanbc.wimsey.com!holly!jerrys@network.ucsd.edu

Subject: COMPUTER AS A REPEATER CONTROLLER  
To: ham-homebrew@ucsd.edu

I would like to setup a 70cm repeater using one of my xt's since they only collect dust anyway. Is there anyone out there using a computer for this purpose.

Or on the other hand, can anyone recommend a cheap controller with a few features.

Drop me a line.  
Thanks in Advance  
jerrys@can.com

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Date: 21 Mar 1994 21:33:56 GMT  
From: pa.dec.com!nntpd.lkg.dec.com!nntpd.bb.dec.com!waf@decwrl.dec.com  
Subject: Converting CB to 10 meters  
To: ham-homebrew@ucsd.edu

Note that it's probably not worth converting a CB to 10m \*unless\* the CB is an SSB model.

Bill, KE1G

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Date: Mon, 21 Mar 1994 04:56:16 GMT  
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa  
Subject: Converting CB to 10 meters  
To: ham-homebrew@ucsd.edu

In article <CMtBvy.ID3@csn.org> erik@csn.org (Erik Mugele) writes:  
>I have had several QSOs with people on 10 meters who were using converted  
>CBs. I have a CB sitting in my junk box and was wondering if it could be put  
>to use in the 10 meter band. Is there some service center I can send it  
>to have it done? Is it something I can do myself? (The CB in question is  
>a Cobra Model 19 Plus, manufactured in 1988.) In general, how hard is it  
>to do this (ie maybe easier on older model CBs)?

Eric: Check the ads in any QST magazine - there's a company that sells  
11 to 10 meter conversion kits. Also, send an email to info@arrl.org  
and only write:

HELP  
INDEX  
QUIT

- when you get the index (via email) look for a file titled something like CB-10M - order it according to the instruction in the 'HELP' file you receive.

Jeff NH6IL

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Date: 20 Mar 1994 17:50:01 -0500  
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!darwin.sura.net!opusc!not-for-mail@network.ucsd.edu  
Subject: DownEast Kits ??  
To: ham-homebrew@ucsd.edu

In <knight.31.000A33B2@ka1dt.mv.com> knight@ka1dt.mv.com (Dave Knight) writes:

>In article <boley.d-100394145630@129.228.248.65> boley.d%wec@dialcom.tymnet.com  
( ) writes:

>>Anybody have any comments on the DownEast microwave kits ??

>Very good stuff -- but it's not a heathkit, you probably need a little bit of  
>building experience.

After building the DEM432 RX and LO kits, I'd say I'm happy with the results. Those chip caps are very tiny though. Good near-vision is handy (or a good magnifying glass in my case :- ) ).

The PSK signal (435.91) from the FO-20 satellite is fairly strong without a preamp and using an indoor antenna. I'm using the HR-2600 for the 28 Mhz out.

There were a couple of reviews about the DownEast kits in QST.

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Phil Moore, Geological Sciences, USC, Columbia,SC, 29208  
Email:phil@epoch.geol.scarolina.edu Packet:ad4fh@#col.sc.usa.noam

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Phil Moore, Geological Sciences, USC, Columbia,SC, 29208  
StratMod Group/Signals Project GEOL<->CSCI (803)777-5202, FAX 777-6610  
Email:phil@epoch.geol.scarolina.edu Packet:ad4fh@kc4gym.sc.usa.noam(.earth.sol)

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Date: Mon, 21 Mar 1994 20:07:03 GMT  
From: news.cerf.net!pravda.sdsc.edu!nic-nac.CSU.net!charnel.net.csuchico.edu!charnel!yeshua.marcam.com!news.kei.com!eff!news.umbc.edu!europa.eng.gtefsd.com!howland.reston.ans.@@ihnp4.ucsd.edu  
Subject: Meter Shunts, etc

To: ham-homebrew@ucsd.edu

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: >: The internal resistance of a meter is a function of meter type and  
: >: meter sensitivity (obviously). In a moving coil meter, you can think  
: >: of the movement as a motor stalled against a spring, and the resistance  
: >: is a result of the motor stall torque against the spring.  
: >  
: >In other words, just the resistance of the coil and connecting wires  
: >(possibly with internal shunt...) But it's a good point that such  
: >a meter is a motor--or generator. If you shake the meter (specifically  
: >rotate it) it will generate some voltage (unless you shake it so hard  
: >it falls apart inside ;-).

: Well no, the stall current is different than just that which you'd  
: have with only the resistance of the windings and possible internal  
: shunt. Otherwise you could just measure the unknown meter with an  
: ohmmeter. That most assuredly won't give the correct result with a  
: moving coil meter. That spring in the meter is placing a real load  
: on the "motor" that's reflected in the apparent resistance of the  
: coil. The work of fighting that spring isn't free.

The work involved in a system that isn't moving is left as an exercise  
for the Physics 100 students. For the electrical types, consider the  
back EMF for DC currents in a coil that is NOT moving, but in a constant  
magnetic field.

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Date: 22 Mar 94 00:40:44 GMT  
From: hp-cv!hp-pcd!hpcvsnz!tomb@hplabs.hp.com  
Subject: Meter Shunts, etc  
To: ham-homebrew@ucsd.edu

Doug Snowden (drs@ccd.harris.com) wrote:

: I have a few meters laying around, and I need to change the fullscale range  
: of most of them, to me useful. For example, I have a meter that has an

etc.

Folk have posted about making shunts, but I haven't seen consideration  
about the damping in the meter after you put a shunt across it. Many  
times this isn't an issue at all, but be aware that if you put a short  
across a d'Arsonval meter (moving coil), the damping will become much  
greater; a shunt is nearly a short. This means that the meter won't  
respond as quickly as it would if simply fed a current. Some movements  
are built underdamped (oscillate a bit before settling in to the final

indication), and these could actually be helped by a shunt. One way to get around excessive damping caused by a shunt is to add a bit of resistance in series with the meter, but the down side of this is that the shunt then must be higher resistance and will dissipate more power and drop more voltage.

It's possible to use the back EMF generated by the moving coil to characterize the meter's damping (or similarly, Q) and frequency, much as is done for speaker drivers. I doubt many hams would care that much about it, but for example the ballistics of a VU meter are pretty well defined, and people dealing with lots of meters do take things like this into account.

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Date: 20 Mar 1994 13:18:49 -0800  
From: ihnp4.ucsd.edu!pacbell.com!sgiblab!barrnet.net!nntp.crl.com!crl.crl.com!not-for-mail@network.ucsd.edu  
Subject: Parasitic oscillations, help!  
To: ham-homebrew@ucsd.edu

asirene@ntuvax.ntu.ac.sg wrote:

: Hi,

: I am building a Ramsey kit QAMP-20, TX Amp with 20 watts output on 20 meters based on MOSFETS and I think I am experiencing  
: parasitic oscillations at VHF, especially once the MOSFET gets hot. Why does this take place only when its hot? When its cool, say  
: the first 20 seconds of keying, it seems ok but once the MOSFET gets hot, there goes the oscillations. Any ideas how I can fix  
: this? I am redesigning the PCB with my own layout, is this advisable? The original board is single sided but I am not sure if their  
: layout is well considered. The oscillations further cause the T-R relay to go beserk, understandably so. I am not too familiar with  
: MOSFET design so I don't know what to do exactly. Will appreciate any advice.

: 73,

: Daniel

Ramsey's designs tend to be pretty minimalist for their amps.  
Not being familiar with this design, I would suggest the following.

1). If there is a resistor from the gate of the MOSFET to ground, place a ferrite bead over the gate end of the resistor and solder it back down.

2.) Make sure the all the lead lengths on every component are short as possible.

- 3.) Use more bypassing on the V+ feed, in theory there should be a coil through which V+ is fed to the transistor, place .001, .1 and 50-100 uf caps on the side where V+ is brought to the board. Wind the V+ connecting wire through a binocular balun once or twice.
- 4.) Knowing Ramsey, they have probably used a rather crude biasing arrangement, this may have to be changed. Again, without circuit details, this is all I could suggest in that regards.
- 5.) Make sure the circuit board is well attached and grounded to a slab of heat sink and metal chassis, depending on the construction. A continuous sheet of metal underneath an RF circuit will do wonders for it.
- 6) What type of load is being used for testing ? Be sure that no problems exist there. Use a proper, non-inductive load rated for the power you will be using. Checks for any shorts or open conditions in the cables. Make sure you do not have any resin bridges between pads on the circuit board, clean off with alcohol.

I am sure there are other things to consider, with more details I could be a bit more direct in my suggestions.

Stephen Dunifer

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Date: Mon, 21 Mar 1994 07:38:14 GMT  
From: news.service.uci.edu!unogate!mvpb.saic.com!news.cerf.net!pravda.sdsc.edu!nic-nac.CSU.net!charnel.net.csuchico.edu!charnel!olivea!sgigate.sgi.com!sgiblab!swrinde!cs.utexas.@@ihnp4.ucsd.edu  
Subject: Series Diodes (was Re: Paralleling Power Di  
To: ham-homebrew@ucsd.edu

In article <3694@grivel.une.edu.au>, Sakari Mattila (smattila@metz.une.edu.au) writes:

>A small slice of history ... Old (pre-1980's) silicon power diodes were  
>not controlled avalanche type. They were destroyed by overvoltages. All  
>new rectifier diodes (except some Schottky diodes) act like zeners and  
>are destroyed only (in practice) by overheating. Thus capacitors are no  
>longer needed if the wiring is equal for each of the series connected diodes.  
>Some power rectifier manuals explaint this.  
>  
>

Thanks for the info. Does that mean that older part numbers, e.g. 1N400X, have been redesigned to be controlled avalanche? One last

question: If I look into a new, commercial HV supply, what will I find? Do they even use multiple discrete series diodes commercially, or just single HV assemblies?

Mike, KK6GM

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Date: Mon, 21 Mar 1994 18:13:46 GMT  
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!math.ohio-state.edu!sol.ctr.columbia.edu!jabba.ess.harris.com!news.ess.harris.com!news@network.ucsd.edu  
Subject: Simple Tx/Rx?  
To: ham-homebrew@ucsd.edu

I want to build an RF remote shutter release for a camera. The idea is to push a button on a transmitter and then have the receiver short two wires to trigger the electronic shutter of the camera. I need a max range of about 50' and it would be nice to have the receiver fairly insensitive to unwanted noise.

I have seen several designs for simple transmitters (CW, tone transmitters, etc.) They are simple (just a few parts, with coils I can wind myself), small and cheap to build. They seem to have adequate power for this application.

What I havn't seen is a simple receiver circuit. If you have any ideas/designs/schematics for simple receivers or TX/RX pairs please email or post them.

Thanks,  
Greg

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Date: 21 Mar 94 20:00:40 GMT  
From: hp-cv!hp-pcd!hpcvsnz!tomb@hplabs.hp.com  
Subject: Simple Tx/Rx?  
To: ham-homebrew@ucsd.edu

Greg Segallis (gsegalli@ic1d.harris.com) wrote:  
: I want to build an RF remote shutter release for a camera.  
: I need a max range of about 50' and  
: it would be nice to have the receiver fairly insensitive to  
: unwanted noise.

: I have seen several designs for simple transmitters (CW, tone



: What I havn't seen is a simple receiver circuit.

Finally, you can pick up pager receiver guts very cheaply sometimes: like around \$10 for a respectable narrow-band FM receiver. This will make the transmitter more complicated, since it couldn't very well be just LC oscillator controlled.

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->

— —

[illegible]

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Date: Tue, 22 Mar 1994 02:47:38 GMT  
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa  
To: ham-homebrew@ucsd.edu

References <CMtBvy.ID3@csn.org>, <2maf72\$ar0@ornews.intel.com>,  
<WAF.94Mar21163356@sunfish.zk3.dec.com>nasa  
Subject : Re: Converting CB to 10 meters

In article <WAF.94Mar21163356@sunfish.zk3.dec.com> waf@sunfish.zk3.dec.com  
(William Freeman USG) writes:

> Note that it's probably not worth converting a CB to 10m  
>\*unless\* the CB is an SSB model.

Not True! Keying the driver stage and adding an simple BFO to the receiver  
would give you a neat CW xcvr.

Jeff NH6IL

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End of Ham-Homebrew Digest V94 #69

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